

Code	Page/Section	Topic	Issue	Suggested changes	General Comments	Response
B001	page 20/Stage C	Community values	Inclusion of local surf breaks/waves value  CHRMAP survey of beach-wave users - 26 th July 2021 to 10 th September 2021.  - 181 survey responses = 84 CHRMAP values  survey responses online, 97 hard copy - 56 'pins' on the map.  - Whilst 'place of residence' was not included in the survey, approximately 30% ..  54 respondents .."visited beaches in the City of Bunbury most often." Bunbury Boardriders Club has 147 members  Who utilise the western beaches on a daily-weekly basis and visit unique Surf-wave locations around Bunbury	- Review 'Bunbury Region Wave Map 2023'  (BRWM_23) - Contact/Provide on-line consult opportunity for local-regional Boardriders / Surf Clubs  - Provide on-line consult opportunity for PUBLIC/non-Club affiliated residents , prior to final CHRMAP release  - Update 'BRWM_23' respective of weighted community consult  - Update CHRMAP 2023 final	Well done, what a massive effort for the document!	Edits have been made to the document to acknowledge its status as a strategic planning document and noting the future work required before implementation of adaptation options on the ground. The CHRMAP recommends protection for Bunbury Back Beach going forward. Groynes have been identified as the most cost-effective option to implement this pathway based on available information. High-level concept design work has been undertaken to allow budget estimates. Further consideration of the local coastal processes, design and costs is required before these recommendations can be progressed to seek funding, environmental impact assessment and approvals/endorsement. It is recommended further localised engagement takes place through this process, including with the Bunbury Boardriders Club, with reference to the Bunbury Region Wave Map 2023.
B002			Groynes	No groynes - old technology. Preferred optins are: 1. artificail reef. 2. sand dumping. Move assets (road etc).  With the environment and tourism being more and more important in the future we need to protect our unique back beach. Groynes will be an eyesore, impedes walking/beach use, reduce social amenity	Other Council areas in WA are using artificail reefs so why cant Bunbury.  The environment is more important that doing the cheapest option.	Edits have been made to the document to acknowledge its status as a strategic planning document and noting the future work required before implementation of adaptation options on the ground. The CHRMAP recommends protection for Bunbury Back Beach and Koomaban Bay going forward. Groynes have been identified as the most cost-effective option to implement this pathway based on available information. High-level concept design work has been undertaken to allow budget estimates. Further consideration of the local coastal processes, design and costs is required before these recommendations can be progressed. Composite protection options may be effective for Bunbury Back Beach, including sections of sand nourishment in combination with seawalls and offshore breakwaters instead of groynes. Following cost-benefit analysis Managed Retreat is not recommended. Artificial reefs are not well-suited to coastal protection in this part of WA as the low tidal range means they are often ineffective during ocean storms with high water levels from storm surge. It is recommended further localised engagement takes place through this process, including with local community members and stakeholders as design work is progressed to ensure the protection pathway is representative of and appropriate to the City and community.
B003					The Capel to Leschenault Coastal Hazard Risk Management & Adaption Plan (CHRMAP) is useful but only in so far as it sets out a collation of some general information about the Bunbury coast in the one document. Beyond this, the usefulness of the CHRMAP is problematic and we encourage the City of Bunbury to act with caution. This document is inadequate as means to direct and action any coastal hazard risk management. The City has considerable responsibility now to ensure the major environmental, social, and economic consequences of this CHRMAP upon the community, and how this community interacts with and values this precious coastal asset, are meaningful and reasonable.  The City of Bunbury Surf Life Saving Club has several key concerns with this CHRMAP process, as well as the conclusions reached and how this document will be applied in future decision The CHRMAP document has been advertised on the City of Bunbury web page as a "draft plan to improve understanding of our changing coastline and to help inform future coastal planning" yet the document in the link states it is a final CHRMAP. The language in the body of the final CHRMAP does not use the word draft or suggested or still to be determined, instead stating it details an implementation plan ready to action.  Most concerningly, it appears the scope of the problem to be addressed is not yet fully understood. Although it is not yet fully understood, fixed solutions are set out and costed and ready to be actioned, alarmingly for benefit in 2120, not now or necessarily between now and 2120. This is a giant leap frog ahead without due process to guide action, resulting in largely under-informed, disconnected, if not unrealistic recommendations.  This, and the obvious lack limited engagement with the Surf Life Saving club and the community more broadly is worrying.	The Capel to Leschenault Coastal Hazard Risk Management & Adaption Plan (CHRMAP) is useful but only in so far as it sets out a collation of some general information about the Bunbury coast in the one document. The document was advertised as a final draft seeking full and complete feedback from the public considering its intended format and content.  It is recognised that further engagement will be required. Notwithstanding, there was repeated and legitimate attempts to engage with the public and stakeholders during the process and the project team acknowledges that the involvement of the public and stakeholders was limited for the level of impact expected on the Bunbury coastline. The document has been updated to include recommendations for further localised engagement takes place through this process, including with local community members and stakeholders as design work is progressed to ensure the protection pathway is representative of and appropriate to the City and community.  We note that there have been some concerns on the methodology, the hazard maps and what it means for the Bunbury community in terms of implementation which is understandable. Public consultation is a key component of CHRMAP project so that issues can be identified and communicated in the process. Most effective solutions can be planned when supported by the community. The document follows the requirements of both technical content and format per State Planning Policy 2.6. The methodology prescribed by SPP2.6 has been used to come up with a conservative allowance for coastal hazards so it can be used to identify vulnerable assets and plan for their adaptation. The method is not structured to come up with the best estimate of shoreline position at a given timeframe. The process is based upon the best available data and represents a conservative estimate that includes allowance for uncertainty. In order to refine coastal hazard allowances, the CHRMAP data collection and investigation recommendations can be implemented. Other implementation actions are trigger based, which the coastal monitoring can assist with. In summary the CHRMAP has been completed using best currently available information. The purpose of the project is to conservatively identify an allowance for coastal hazards to allow identification of vulnerable assets to inform future planning and risk management.  SPP2.6 defines an appropriate measure to assess the varied positive and negative impacts of coastal hazard management options through a Multi-Criteria Assessment framework. Criteria set consider environmental, social, and economic sustainability, as well as more fundamental factors such as effectiveness (does it work). Ongoing reviews and a presumption that more public and stakeholder feedback will be forthcoming based on the response to the draft CHRMAP, will help to refine these criteria and improve the long term CHRMAP actions. The document was undertaken using available information at the time over an 18 month period. It is expected that new information will continue to come to light beyond the conclusion of this project, which is why the CHRMAP recommends regular reviews (as also required by SPP 2.6).  The CHRMAP recommends protection for Bunbury Back Beach and Koomabana Bay going forward. Groynes have been identified as the most cost-effective option to implement this pathway based on available information. High-level concept design work has been undertaken to allow budget estimates. Further consideration of the local coastal processes, design and costs is required before these recommendations can be progressed to seek funding, environmental impact assessment and approvals / endorsement. Composite protection options may be effective for Bunbury Back Beach, including sections of sand nourishment in combination with seawalls and offshore breakwaters instead of groynes. It is recommended further localised engagement takes place through this process, including with the Bunbury Surf Life Saving Club.

As the City will be aware, the City of Bunbury Surf Life Saving Club is the oldest regional lifesaving club in Western Australia, with history at the Bunbury Back Beach dating back to the early 1900's. The club community is extensive, and the membership has a wealth of current and historical knowledge about the Bunbury Back Beach and the Bunbury coast more generally, none of which has been engaged with.

The Surf Life Saving Club provides an essential, volunteer community service. It is a community use that requires a home in situ on the beach, now and in 100 years' time. Preserving this, and the beauty and function and accessibility of our coastline is paramount to the Club and its membership.

We suggest these same aspirations and values equally apply to the overall Bunbury community and its future sustainability plus highly valued, way of coastal life.

In this context, key concerns are:

Planning actions to deliver now that serve a 100-year horizon lacks sophistication. We are aware of considerable industry criticism about this method in the CHRMAP framework. It is apparent that to take this 'background' anywhere, far more detailed, careful investigation, science, engagement, and evaluation is required.

The methodology for suggested management actions and their cost appears arbitrary and to grossly undervalue the impact and cost on landowners and the community impacted by the 100-year coastal hazard line. This cannot be underestimated. The coastal values survey in the CHRMAP is superficial at best.

Community and stakeholder involvement was stated in the CHRMAP document to be a critical component of the CHRMAP process. However, the number of survey responses and workshop participants compared to population and/or impacted people and landowners, is not considered meaningful let alone statistically valid. It is alarming that consultation (not engagement) with only a handful of individual community representatives is largely the basis for (hugely expensive and dramatic if not detrimental) preferred risk mitigation actions.

For a shared environmental project across a large stretch of coast with many government agencies involved, it is concerning this exercise does not include an overarching strategic view or a strategic evaluation of issues then solutions between and across Management Units and Local Government areas. There are no actions and/or responses that leverage from and address principles of environmental, social, and economic sustainability, ideally for net community benefit at short, medium as well as longer term horizons.

The documentation is highly repetitive, high level and generic. This exercise appears largely desktop lacking detailed new, meaningful, site specific data and analysis, or only vague references to how this will be obtained let alone factored in. This information is required to inform decision making, not worked out afterwards.

The report is voluminous and not easy for the average person to follow, which makes it inaccessible to the community to understand. The very low turnout at the singular drop-in information session reiterates and demonstrates a low understanding in the community broadly about this project and implications of the recommendations it makes.

The lack of reference to historical coastal erosion, which is understood to be available back to the 1950's, has not been referenced. This history would appear to show limited coastal erosion along much of this coastline in the last 80 years, including in the last approximately 30 years when climate change and sea level rise has been accelerating.

It would appear short term, (relatively) low-cost protective measures, such as regeneration of existing dunes and improved management of the coastal environs now, is overlooked yet may deliver considerable benefits.

In addition to the Waterfront project, which will have considerable coastal impact and is not examined in any detail, an artificial reef and wave pillow are presently being pursued for installation in the City of Bunbury. Why is a combination of solutions, and for varying time horizons, relative to different thresholds or climate events eventuating (or not), even recognising likely technological advancement, not explored?

Stage 3 of the Bunbury Waterfront project, Environmental Review process has only just begun yet appears referenced as a certainty in this CHRMAP. Extensive documents including a more detailed CHARMAP and environmental assessments for this was only released for public comment this week and is yet to be approved.

Flooding is an historical issue in Bunbury. It appears the solution for the inlet and East Bunbury is reasonably straightforward, substantively raising the inlet flood gate height to address sea level change.

For South Bunbury, the CHRMAP demonstrates consequence of future sea level rise with no intervention however the possible solutions to address this are vague. This issue requires close examination and community engagement ahead of any action. This is an existing drainage and waterway problem, not just a new coastal hazard matter.

					<p>Proposed x 15 Rock Groins along Back Beach</p> <p>The monitoring activities described in the CHRMAP document are presently absent but are duly identified as being required first. This information is required to identify the impacts of the recommended Options, used to guide decisions about which really is the best solution or suite of solutions to pursue. This is therefore critical for future successful implementation in both the short term and long term. The question we ask prior to any Option being undertaken; will the City of Bunbury undertake the monitoring recommendations as recommended in CHRMAP?</p> <p>Site specific monitoring and investigation is also recommended to be undertaken and this is considered pivotal in managing coastal hazard risk. Will the City of Bunbury also undertake this recommendation prior to any decision making?</p> <p>The City of Bunbury Surf Life Saving Club strongly recommends that further investigation and monitoring of site-specific zones is critical prior to any discussion or decision about which option is best. The suggestion of so many groins is a dramatic and expensive change and other options may preferential or at least pursued at variable thresholds. This requires very careful environmental, social, and economic evaluation, as well as community engagement, before these suggestions advance anywhere.</p> <p>Ongoing lease of coastal facilities</p> <p>On page 65 of the CHRMAP, LU6 suggests a review of all coastal leasehold facilities. This action is critical to the future of the Surf Life Saving Club but seems brushed over. As it continues to do, the Surf Club expects to work closely with the city as it manages this important community asset, with aim to preserve viability now and well into the future.</p> <p>This is a harsh coastal environment and as the city is aware, to remain fit for purpose, the City of Bunbury Surf Life Saving Club building has been redeveloped over its 100+ year history. Knowledge of the process, timeline, and framework that the City of Bunbury has developed in respect to the Final CHRMAP recommendations must be communicated and collaborated with the key stakeholders.</p> <p>Has the City of Bunbury developed this framework and timeline of process and implementation, and if yes, when will this be communicated to stakeholders to ensure their future planning can be knowledgeable and informed? Realistically future proofing the club's viability and its physical premises is critical to the role the City of Bunbury Surf Life Saving Club has within the community and the wider south west region.</p>	
B004					<p>Recently, staff from DBCA has been working on the sand dunes in the vicinity of the path from the Mindalong Beach car park over the dunes to Mindalong Beach. They did some cursory work on the path itself but mostly stabilising the sand dunes against blowouts caused by foot traffic by people avoiding the hazardous steep path from the seaward lookout down to the beach. This is the classic situation of placing an ambulance at the bottom of a cliff, instead of a fence at the top.</p> <p>If the steep path down to the beach was made less hazardous, people would not climb down the dunes to avoid it. I have seen people having to assist their dogs to climb up the big benches made in the sand on the path. At the bottom, fabric with big spaces has been pegged in over the sand benches, making it difficult not to trip over toes caught in the fabric.</p> <p>The obvious solution is to install proper steps on the steep part of the track.</p>	
B005	Page 33 Section 4.4	Coastal Assets and Community Values	The list of 'key coastal, estuarine and riverine values identified by participants across the whole study area' neglects to include Ocean Drive as a key value, including the various facilities adjacent to this road (e.g. parks, car parks, surf lifesaving club, café, paths, lighting, toilets, landscaped gardens etc.). Ocean Drive is the most regionally significant route in the City of Bunbury as it provides crucial access and enjoyment of the coast to both residents and visitors alike.	Under the list of 'key coastal, estuarine and riverine values identified by participants across the whole study area', add the following point: •Ocean Drive, including the various facilities adjacent to this road (e.g. parks, car parks, surf lifesaving club, café, paths, lighting, toilets, landscaped gardens etc.).	The draft CHRMAP needs to specify the significant existing coastal assets, such as Ocean Drive and the various facilities adjacent (e.g. parks, car parks, surf lifesaving club, café, paths, lighting, toilets, landscaped gardens etc.), that must be protected to ensure the future economic and social wellbeing of the City of Bunbury.	The comments are acknowledged and will be considered in future coastal management but are considered outside the consultant's scope of work for this project. It has been recommended the Foreshore Management Plan be updated for this area. Monitoring should inform further decision making, as recommended in the CHRMAP.
	Page 34 Section 4.4	Coastal Assets and Community Values	The list of 'key issues and concerns / risks to the coastal values' neglects to include the loss of the current high level of access to the coast and its amenities by residents and tourists.	Under the list of 'key issues and concerns / risks to the coastal values', add the following point: •The loss of the current high level of access to the coast and its amenities by residents and tourists.		The detailed comments are acknowledged. Ocean drive and associated public land and infrastructure have been quantified in the assets and values identification stage and again considered in the assessment and design and costing of options. The value associated with these is a contributing factor to the recommendation of protection for this section of coast. With regard to suggestions to further detail around recommendations, edits have been made to the document to acknowledge its status as a strategic planning document and noting the future work required before implementation of adaptation options on the ground. The CHRMAP includes 'Beach erosion and its environmental, social and financial impacts', which considers community values of access to the beach and financial impacts to tourism functions. These comments now form part of the final reporting, and will be available for consideration during future coastal management investigations.

Page 35 Section 4.4 Table 4-1	Coastal Assets and Community Values	The 'snapshot of assets at risk' column for MU5 – Bunbury in Table 4-1 lists 'approximately 340 roads at risk of inundation by 2120; 57 by erosion'. However, there is no distinction made to the importance of some roads over others, particularly Ocean Drive which is not only the most regionally significant route in MU5 – Bunbury study area, but also the City of Bunbury more generally, as it provides crucial access and amenities, and hence enjoyment of the open coast to both residents and visitors alike.	Under the 'Snapshot of Assets at Risks' column for MU5 – Bunbury in Table 4.1 add the following point: •The regionally significant route of Ocean Drive, including the various facilities adjacent to this road, is at immediate risk of erosion.		
Page 36 Section 4.5 Table 4-2	Success Criteria	The following two 'success criteria' in Table 4-2 are supported: "• Maintain critical infrastructure supporting the community (roads, utilities). •Manage and maintain coastal infrastructure that provides access to the water and supports the lifestyle enjoyed by people in the region." However, and again, there is no proper distinction made to the importance of some roads and their utilities and coastal infrastructure over others. In this respect, roads such as Ocean Drive, including its utilities / services, and the coastal infrastructure / facilities within the road reserve and reserves adjoining (i.e. seaward side), hold greater importance and significance to Bunbury's economic and social wellbeing, and should have higher independent recognition.	Re-word the following two 'success criteria' as follows: •Maintain critical infrastructure supporting the community (roads, utilities), with priority given to roads and their utilities that have provide the greatest economic and social benefits to the City of Bunbury and region generally. •Manage and maintain coastal infrastructure that provides access to the water and supports the lifestyle enjoyed by people in the region, with priority given to coastal infrastructure that have provide the greatest economic and social benefits to the City of Bunbury and region generally.	The suggested wording will not serve to increase maintenance of Ocean Drive further.	
Page 52 Section 7.1.5 Table 7-2	Recommended option(s) for further consideration for each MU	The recommended option of 'PR2 – Groynes' for MU5 – Bunbury in Table 7-2 is supported, but with caution, as careful design, location, and construction is required in order to ensure these are effective, longstanding solutions that require minimal ongoing maintenance, and don't cause excessive sand accretion and / or seagrass accumulation in some locations, and erosion in others. Groynes often solve the problem for one location, only to shift the problem further along the coast in the direction of the longshore drift.	No change - recommendation supported without change.		
Page 53 Section 7.1.5 Table 7-3	Recommended option(s) for further consideration for each MU	The recommended option of 'PR6 – Storm Surge Barrier' for MU5 – Bunbury in Table 7-3 is supported.	No change - recommendation supported without change.		
Page 60 8.1.1.2.1	Special Control Area	A special control area (SCA) based on the position of the 2120 coastal processes setback line is cautiously supported, however, there needs to be proper consultation on the final manner and form of such SCA to ensure that any development regulation to manage hazard exposure, will be (as stated) assessed on a case-by-case basis to control over the intensification of land where coastal risks are prominent (and real). Ideally, the SCA should be used as a statutory instrument for application of a comprehensive local planning policy (LPP) for the proper assessment of applications for development approval.	This section should state that an SCA can and should be used as a statutory instrument for application of a local planning policy that gives proper criteria (including performance approaches) for the assessment of applications for development approval in the SCA.	This is included in the advertised draft at Table 81.	
Page 61 8.1.1.2.2	Local Planning Policy	A comprehensive LPP that is used for development assessment is recommended over any inflexible, regulatory-like provisions in an SCA.	This section should be revised to identify that an LPP can and should be used for proper assessment of applications for development approval in any SCA.	This is included in the advertised draft at Table 81.	

Page 61 8.1.1.2.3	Notifications on Titles	Notifications on title triggered by development or subdivision approval applications are the most sensible instrument for private properties that are not likely to be subject to coastal erosion until well after 2050, allowing these to be redeveloped and enjoyed / benefitted from over the ordinary lifespan of the redevelopment before the risk presents. Notwithstanding this, the wording of such notification(s) will be important.	No change - recommendation supported without change.		
Page 65 Section 8.2 Table 8-2	Content for City of Bunbury local planning scheme amendment appendix in accordance with LU1.	The 'Additional Provisions' of the SCA in Table 8-2 are supported because they require due regard to be given to local planning policies, and the wording of the notification is the standard adopted by the Western Australian Planning Commission (WAPC).	No change - recommendation supported without change.		
Page 74 Section 8.7.1 Table 8-3	Short-Term Recommendations	The short-term erosion and inundation recommendations in Table 8-3 for MU5 – Bunbury of 'Protection with Groynes (PR2)' and 'Replace storm surge barrier (PR6)' respectively are supported. However, again a level of caution is urged as careful design, location and construction is required in order to ensure groynes are effective, longstanding solutions that require minimal ongoing maintenance, and don't cause excessive sand accretion and / or seagrass accumulation in some locations, and erosion in others. Groynes often solve the problem for one location, only to shift the problem further along the coast in the direction of the longshore drift.	Under the 'Erosion Recommendations' column for MU5 – Bunbury, add the following point: • Groynes to be designed, located and constructed carefully in order to ensure they are effective, longstanding solutions that require minimal ongoing maintenance, and do not cause excessive sand accretion and / or seagrass accumulation in some locations, and erosion in others.		
Page 79 Section 8.7.2 Table 8-5	Medium and Long-Term Recommendations	The recommendations of 'Design assets to withstand impacts (AC1)' and 'Protection Structure Audit (NR2)' in Table 8-5 (MU5 – Bunbury) are supported, particularly the latter citing the 'ocean coast seawalls generally. However, these needs to give priority to the assets and structures of Ocean Drive including the various facilities adjacent to this road of regional significance (e.g. parks, car parks, surf lifesaving club, café, paths, lighting, toilets, landscaped gardens etc.). It is inappropriate to leave this to 'case-by-case work needed to public assets'.	Under the 'Notes' column of recommendations 'Design assets to withstand impacts (AC1)' and 'Protection Structure Audit (NR2)' for MU5 – Bunbury, add the following point: •The assets and structures of Ocean Drive including the various facilities adjacent to this road of regional significance (e.g. parks, car parks, surf lifesaving club, café, paths, lighting, toilets, landscaped gardens etc.) are to be given priority in the design of assets to withstand impacts and protection structure audit, given their high economic and social importance to Bunbury and the region.		